

5 What is claimed is:

- Claim A1*
1. In a bi-directional communication system performing a sequence of operations including groups of one or more individual operations having an associated status indication, a method for capturing indication of system status, comprising the 10 steps of:
 - generating ordered status indications reflecting the status of completion of sequentially performed groups of operations wherein individual status indications are associated with corresponding groups of operations;
 - capturing said generated status indications;
 - 15 retaining said captured status indications following initiation of repetition of said groups of operations; and
 - providing said retained captured status indications as identification of an attained operational status of said system for system operation diagnosis.
 - 20 2. A method according to claim 1, wherein
said bi-directional communication system is a cable modem,
said generating step generates hierarchically ordered status indications,
and
said sequentially performed groups of operations comprise at least one
25 of (a) an initialization procedure of said cable modem system, (b) a fault diagnosis procedure of said cable modem system and (c) an abnormal condition monitoring procedure of said cable modem system.
 - 30 3. A method according to claim 1, wherein
said groups of operations include two different operations from
operations including (a) tuning, (b) ranging (c) configuring and (d) registering.
 - 35 4. A method according to claim 1, wherein
said status indications identify the status of groups of operations being
performed prior to interruption by a condition including at least one of (a) a fault condition, (b) an abnormal operation condition and (c) a commanded interruption condition.

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5. A method according to claim 1, wherein
said captured status indications identify the highest operational state
reached in initialization of said system prior to an interruption and are provided in
response to a User command.
- 10 6. A method according to claim 5, wherein
said User command comprises selection of a power switch setting.
7. A method according to claim 1, wherein
said captured status indications are usable in combination for fault
15 finding and problem diagnosis by a technician.
8. A method according to claim 1, wherein
said providing step comprises at least one of (a) displaying said retained
captured status indications to a User of said system, and (b) maintaining said retained
20 captured status indications in memory accessible by a User of said system.
9. A method according to claim 8, wherein
said providing step comprises retaining said captured status indications
during re-cycling of said sequentially performed groups of operations.
- 25 10. A method according to claim 1, wherein
said providing step comprises displaying said retained captured status
indications as hierarchically ordered visual indicators comprising at least one of (a)
LEDs, (b) a visible progressive illuminated bar indicator, (c) non-LED illuminations
30 and (d) audible indications.
11. A method according to claim 1, wherein
said providing step comprises maintaining said retained captured status
indications in a removable storage medium to be available during re-cycling of said
35 sequentially performed groups of operations.
12. A method according to claim 1, wherein
said providing step comprises providing via remote access
communication said retained captured status indications as hierarchically ordered fields
40 of data indicators.

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13. In a modem system performing an initialization procedure comprising a sequence of operations including groups of one or more individual operations having an associated status indication, a method for capturing indication of system status, comprising the steps of:

- generating hierarchically ordered status indications reflecting the status
10 of completion of sequentially performed groups of operations wherein individual status indications are associated with corresponding groups of operations and identify the status of groups of operations being performed prior to interruption by a condition including at least one of (a) a fault condition, (b) an abnormal operation condition and (c) a commanded interruption condition;
- 15 capturing said generated status indications;
retaining said captured status indications following initiation of repetition of said groups of operations; and
providing said retained captured status indications as identification of an attained operational status of said system for system operation diagnosis.

- 20 14. A method according to claim 13, wherein
said sequentially performed groups of operations comprise at least one of (a) an initialization procedure of said cable modem system, (b) a fault diagnosis procedure of said cable modem system and (c) an abnormal condition monitoring
25 procedure of said cable modem system.

15. A method according to claim 13, wherein
said captured status indications identify the highest operational state reached in initialization of said system.

- 30 16. A method according to claim 13, wherein
said captured status indications are usable in combination for fault finding and problem diagnosis by a technician.

- 35 17. A method according to claim 13, wherein
said groups of operations include two different operations from operations including (a) tuning, (b) ranging (c) configuring and (d) registering.

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18. A method according to claim 13, wherein

said captured status indications identify the highest operational state reached in initialization of said system prior to an interruption and are provided in response to a User command.

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19. In a modem system performing an initialization procedure comprising a sequence of operations including groups of one or more individual operations having an associated status indication, a method for capturing indication of system status, comprising the steps of:

generating hierarchically ordered status indications reflecting the status

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of completion of sequentially performed groups of operations partitioned into a hierarchical sequence of operational levels with individual levels including one or more of (a) tuning, (b) ranging (c) configuring and (d) registering operations and having a corresponding status indication;

capturing said generated status indications;

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retaining said captured status indications following initiation of repetition of said groups of operations; and

providing said retained captured status indications as identification of an attained operational status of said system for system operation diagnosis.

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20. A method according to claim 19, wherein

said sequentially performed groups of operations comprise at least one of (a) an initialization procedure of said cable modem system, (b) a fault diagnosis procedure of said cable modem system and (c) an abnormal condition monitoring procedure of said cable modem system.

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21. A method according to claim 19, wherein

said captured status indications identify the highest operational state reached in initialization of said system.